Amendment to the Claims:

1.   (Previously Presented) A method for determining geometrical properties of a structure of an object displayed in an image, comprising the steps of:

(a) adapting a deformable surface model to the object;

(b) applying additional geometrical information to the adapted deformable surface model of the object; and

(c) extracting the geometrical properties of the structure of the object from the adapted deformable surface model to which the additional geometrical information has been applied.

2.   (Previously Presented) The method according to claim 1, wherein step (b) of applying additional geometrical information to the adapted deformable surface model of the object further comprises the steps of:

identifying surface elements of the deformable surface model relating to a particular sub-part of the object; and

fitting a geometrical primitive to the surface elements relating to the particular sub-part of the object in the deformable surface model, the geometrical primitive having a form corresponding to a form of the particular sub-part.

3.   (Previously Presented) The method according to claim 2, wherein the geometrical properties of the object are extracted on the basis of the geometrical primitive.

4.   (Previously Presented) The method according to claim 2, wherein the surface elements of the particular sub-part of the object are identified by means of labels assigned to the surface elements belonging to the particular sub-part.

5.   (Cancelled)

6.   (Cancelled)

7.   (Cancelled)

8.   (Previously Presented) An image processing device, comprising:

a memory which stores a deformable model and an image depicting an object; and

an image processor which determines geometrical properties of the object, wherein the processor is programmed to perform the following operations:

(a) adapting a deformable surface model to the object;

(b) applying additional geometrical information to the adapted deformable surface model of the object; and

(c) extracting the geometrical properties of a structure of the object from the adapted deformable surface model to which the additional geometrical information has been applied.

9. (Previously Presented) A computer-readable medium having processor-executable instructions thereon for execution by a processor of an image processing device to control the processor to determine geometrical properties of an object by performing the steps:

(a) adapting a deformable surface model to the object;

(b) applying additional geometrical information to the adapted deformable surface model of the object; and

(c) extracting the geometrical properties of a structure of the object from the adapted deformable surface model to which the additional geometrical information has been applied.

10. (Previously Presented) A method for determining geometric properties of a subpart of an object, comprising:

(a) with a processor, applying a deformable model represented by a polygon mesh to a surface of an object of interest from an image;

(b) with the processor, deforming the deformable model to optimally fit a surface of at least one sub-part of the surface of the object of interest;

(c) with the processor, determining geometrical properties of the object of interest based on the deformable model fit to the sub-part.

11. (Previously Presented) The method according to claim 10, further including:

labeling elements of the polygon mesh corresponding to the at least one sub-part of interest; and

fitting a geometric primitive to the labeled elements of the polygon mesh corresponding to each of the at least one sub-part of interest; and

wherein the geometric properties of the object are determined based on the geometric primitive.

12. (Previously Presented) The method according to claim 10, wherein the deformable model is fit to at least first and second sub-parts of the object and further including:

identifying elements of the polygon mesh fit to the first sub-part;

identifying elements of the polygon mesh fit to the second sub-part;

fitting a first geometric primitive to the elements of the polygon mesh fit to the first sub-part;

fitting a second geometric primitive to the elements of the polygon mesh fit to the second sub-part; and

determining the geometric properties of the object using properties of the first and second geometric primitives.

13. (Currently Amended) The method according to claim 12, wherein the object is a bone the first and second sub-parts are an end and a shaft, respectively, of the bone, the first and second geometric primitives are a sphere and a line, respectively, and the geometric property of the object is at least one of a location ~~of a center of the sphere, an axis of the sphere, a location of the line, the~~ an orientation, and/or a center ~~of the line, and the intersection of the axis of the sphere and the line~~ which are derived directly from parameters of the first and second primitives.

14. (Previously Presented) The method according to claim 10, wherein the step of deforming the deformable model to optimally fit the surface of the sub-part of the object, further includes:

identifying a plurality of surface points of the surface of the sub-part of the object; and

altering the polygon mesh to fit vertices of the polygons mesh to the identified surface points.

15. (New) The method according to claim 1, wherein step (b) of applying additional geometrical information to the adapted deformable surface mode information includes:

identifying surface elements belonging to subparts of the object;

labeling surface elements belonging to the respective subparts of the object;

selecting a geometric primitive in accordance with a measurement to be carried out and form a selected corresponding subpart;

fitting the geometric primitive to the surface elements of the selected corresponding subpart; and

determining a rule which maps the geometric primitive onto the selected corresponding subpart.

16. (New) The method according to claim 15, wherein the object is a femur and the subparts include a femur head and a femur shaft.

17. (New) The method according to claim 16, wherein the geometric primitive fit to the femur head includes a sphere and the geometric primitive fit to the femur shaft includes a straight line.

18. (New) The method according to claim 1, wherein the deformable surface model includes a mesh of triangles, each triangle having a normal and further including:

(d) for each triangle, carrying out a search along a triangle normal to find a point of intersection with the object;

(e) formulating an energy function from the points of interaction;

(f) minimizing the energy function to define new triangle coordinates;

(g) iteratively repeating steps (d)-(f) to generate a deformed model;

(h) measuring geometric properties of the object.

19. (New)   The method according to claim 18, wherein step (b) of applying additional geometrical information to the adapted deformable surface mode information includes:

identifying surface elements belonging to subparts of the object;

labeling surface elements belonging to the respective subparts of the object;

selecting a geometric primitive in accordance with a measurement to be carried out and form a selected corresponding subpart;

fitting the geometric primitive to the surface elements of the selected corresponding subpart; and

determining a rule which maps the geometric primitive onto the selected corresponding subpart.

20. (New)   The method according to claim 19, wherein measuring geometric properties of the object includes:

measuring properties of the fit geometric primitive.